Sequence Listing

<110> Baker, Kevin Botstein, David Eaton, Dan Ferrara, Napoleone Filvaroff, Ellen Gerritsen, Mary Goddard, Audrey Godowski, Paul Grimaldi, Christopher Gurney, Austin Hillan, Kenneth Kljavin, Ivar Napier, Mary Roy, Margaret Tumas, Daniel Wood, William

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<212> PRT

<213> Homo Sapien

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35 40 45

Gly Pro Cys Ala Ala Gln Pro Cys Arg Asn Gly Gly Val Cys Thr
50 55 60

Ser Arg Pro Glu Pro Asp Pro Gln His Pro Ala Pro Ala Gly Glu 65 70 75

Pro Gly Tyr Ser Cys Thr Cys Pro Ala Gly Ile Ser Gly Ala Asn 80 85 90

Cys Gln Leu Val Ala Asp Pro Cys Ala Ser Asn Pro Cys His His

Gly Asn Cys Ser Ser Ser Ser Ser Ser Ser Asp Gly Tyr Leu

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Arg	Gln	Leu	Gln	Pro 155	Val	Pro	Ala	Thr	Gln 160	Glu	Pro	Asp	Lys	Ile 165
Leu	Pro	Arg	Ser	Gln 170	Ala	Thr	Val	Thr	Leu 175	Pro	Thr	Trp	Gln	Pro 180
Lys	Thr	Gly	Gln	Lys 185	Val	Val	Glu	Met	Lys 190	Trp	Asp	Gln	Val	Glu 195
Val	Ile	Pro	Asp	11e 200	Ala	Cys	Gly	Asn	Ala 205	Ser	Ser	Asn	Ser	Ser 210
Ala	Gly	Gly	Arg	Leu 215	Val	Ser	Phe	Glu	Val 220	Pro	Gln	Asn	Thr	Ser 225
Val	Lys	Ile	Arg	Gln 230	Asp	Ala	Thr	Ala	Ser 235	Leu	Ile	Leu	Leu	Trp 240
Lys	Val	Thr	Ala	Thr 245	Gly	Phe	Gln	Gln	Cys 250	Ser	Leu	Ile	Asp	Gly 255
Arg	Ser	Val	Thr	Pro 260	Leu	Gln	Ala	Ser	Gly 265	Gly	Leu	Val	Leu	Leu 270
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Ser	Lys	Ile	Asp	Tyr 395	Cys	Ile	Leu	Asp	Pro 400	Cys	Arg	Asn	Gly	Ala 405

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695

710

700

Ser Arg Pro Ala Met Tyr Asp Val Ser Pro Ile Ala Tyr Glu Asp

Tyr Ser Pro Asp Asp Lys Pro Leu Val Thr Leu Ile Lys Thr Lys

705

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Ш
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Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser 50 55 60

Tyr Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val Gly
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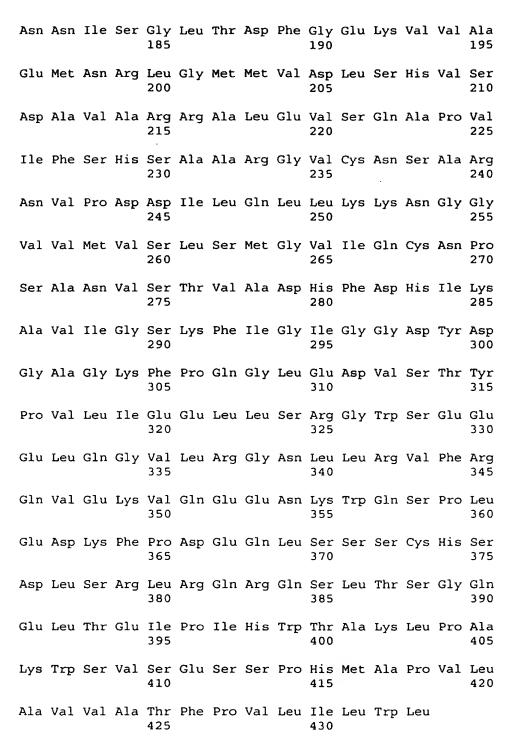
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<213> Homo Sapien

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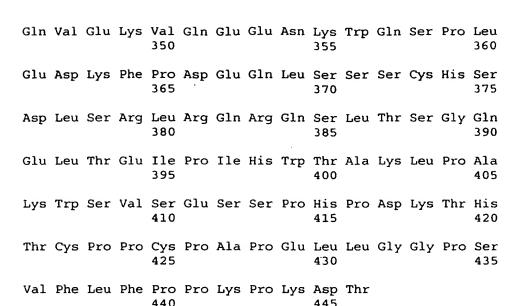
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Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln
35 40 45

Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser

				50					55					60
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Asp	Ala	Leu	Arg	Leu 95	Thr	Leu	Glu	Gln	Ile 100	Asp	Leu	Ile	Arg	Arg 105
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Tyr	Met	Leu	Gly	Val 155	Arg	Tyr	Leu	Thr	Leu 160	Thr	His	Thr	Cys	Asn 165
Thr	Pro	Trp	Ala	Glu 170	Ser	Ser	Ala	Lys	Gly 175	Val	His	Ser	Phe	Tyr 180
Asn	Asn	Ile	Ser	Gly 185	Leu	Thr	Asp	Phe	Gly 190	Glu	Lys	Val	Val	Ala 195
Glu	Met	Asn	Arg	Leu 200	Gly	Met	Met	Val	Asp 205	Leu	Ser	His	Val	Ser 210
Asp	Ala	Val	Ala	Arg 215	Arg	Ala	Leu	Glu	Val 220	Ser	Gln	Ala	Pro	Val 225
Ile	Phe	Ser	His	Ser 230	Ala	Ala	Arg	Gly	Val 235	Cys	Asn	Ser	Ala	Arc 240
Asn	Val	Pro	Asp	Asp 245	Ile	Leu	Gln	Leu	Leu 250	Lys	Lys	Asn	Gly	Gly 255
Val	Val	Met	Val	Ser 260	Leu	Ser	Met	Gly	Val 265	Ile	Gln	Cys	Asn	Pro 270
Ser	Ala	Asn	Val	Ser 275	Thr	Val	Ala	Asp	His 280	Phe	Asp	His	Ile	Lys 285
Ala	Val	Ile	Gly	Ser 290	Lys	Phe	Ile	Gly	Ile 295	Gly	Gly	Asp	Tyr	Asp 300
Gly	Ala	Gly	Lys	Phe 305	Pro	Gln	Gly	Leu	Glu 310	Asp	Val	Ser	Thr	Tyr 315
Pro	Val	Leu	Ile	Glu 320	Glu	Leu	Leu	Ser	Arg 325	Gly	Trp	Ser	Glu	Glu 330
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Gln Asp Pro Thr Leu Leu Ile Gly Ser Ser Leu Leu Ala Thr Cys
50 55 60

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	Lys His Ala Ty	r Cys Ser 380	Asn Leu		Phe Arg 385	Leu Tyr	Asp	Gln 390							
	Trp Arg Ala Tr	p Met Gln 395	Lys Ser		Lys Thr 400	Arg Asn	Gln	Asp 405							
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<213> Homo Sapien

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His Gly Ile Gly Arg Leu Thr Ala Tyr Glu Phe Ala Lys Leu Lys
50 55 60

Ser Lys Leu Val Leu Trp Asp Ile Asn Lys His Gly Leu Glu Glu 65 70 75

Thr Ala Ala Lys Cys Lys Gly Leu Gly Ala Lys Val His Thr Phe 80 85 90

Val Val Asp Cys Ser Asn Arg Glu Asp Ile Tyr Ser Ser Ala Lys 95 100 105

Lys Val Lys Ala Glu Ile Gly Asp Val Ser Ile Leu Val Asn Asn 110 115 120

Ala Gly Val Val Tyr Thr Ser Asp Leu Phe Ala Thr Gln Asp Pro 125 130 135

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155 160 165

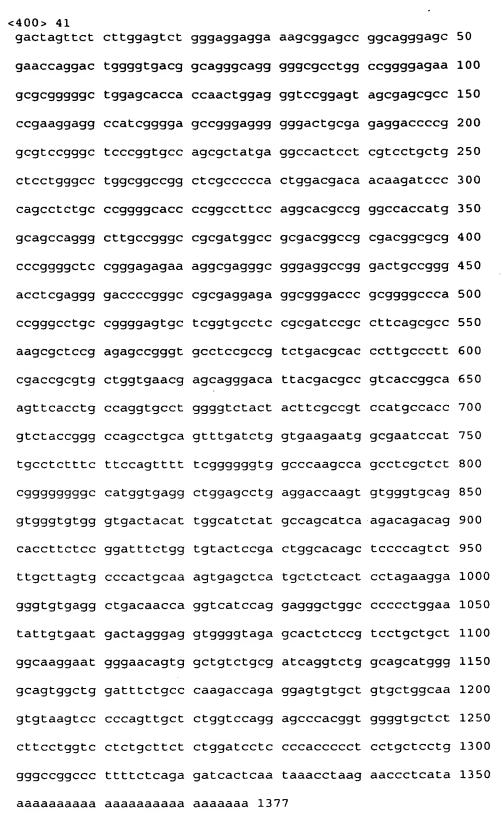
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Phe Leu Leu Ala Tyr Cys Ser Ser Lys Phe Ala Ala Val Gly Phe 185 190 195

His Lys Thr Leu Thr Asp Glu Leu Ala Ala Leu Gln Ile Thr Gly

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	Ile	Lys	Asn	Pro	Ser 230	Thr	Ser	Leu	Gly	Pro 235	Thr	Leu	Glu	Pro	Glu 240	
	Glu	Val	Val	Asn	Arg 245	Leu	Met	His	Gly	Ile 250	Leu	Thr	Glu	Gln	Lys 255	
	Met	Ile	Phe	Ile	Pro 260	Ser	Ser	Ile	Ala	Phe 265	Leu	Thr	Thr	Leu	Glu 270	
	Arg	Ile	Leu	Pro	Glu 275	Arg	Phe	Leu	Ala	Val 280	Leu	Lys	Arg	Lys	Ile 285	
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Ser Pro Pro Leu Asp Asp Asn Lys Ile Pro Ser Leu Cys Pro Gly
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His Pro Gly Leu Pro Gly Thr Pro Gly His His Gly Ser Gln Gly
35 40 45

Leu Pro Gly Arg Asp Gly Arg Asp Gly Ala Pro Gly
50 55 60

Ala Pro Gly Glu Lys Gly Glu Gly Gly Arg Pro Gly Leu Pro Gly
65 70 75

Pro Arg Gly Asp Pro Gly Pro Arg Gly Glu Ala Gly Pro Ala Gly 80 85 90

Pro Thr Gly Pro Ala Gly Glu Cys Ser Val Pro Pro Arg Ser Ala 95 100 105

Phe Ser Ala Lys Arg Ser Glu Ser Arg Val Pro Pro Pro Ser Asp 110 115 120

Ala Pro Leu Pro Phe Asp Arg Val Leu Val Asn Glu Gln Gly His
125 130 135

Tyr Asp Ala Val Thr Gly Lys Phe Thr Cys Gln Val Pro Gly Val 140 145 150

Tyr Tyr Phe Ala Val His Ala Thr Val Tyr Arg Ala Ser Leu Gln 155 160 165

Phe Asp Leu Val Lys Asn Gly Glu Ser Ile Ala Ser Phe Phe Gln 170 175 180

Phe Phe Gly Gly Trp Pro Lys Pro Ala Ser Leu Ser Gly Gly Ala 185 190 195

Met Val Arg Leu Glu Pro Glu Asp Gln Val Trp Val Gln Val Gly 200 205 210

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Val Phe Ala

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Val Leu Leu Ala Leu Leu Gly Thr Thr Trp Ala Glu Val Trp Pro 20 25 30

Pro Gln Leu Gln Glu Gln Ala Pro Met Ala Gly Ala Leu Asn Arg
35 40 45

Lys Glu Ser Phe Leu Leu Ser Leu His Asn Arg Leu Arg Ser
50 55 60

Trp Val Gln Pro Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser
65 70 75

Asp Ser Leu Ala Gln Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly 80 85 90

Ile Pro Thr Pro Ser Leu Ala Ser Gly Leu Trp Arg Thr Leu Gln
95 100 105

Val Gly Trp Asn Met Gln Leu Leu Pro Ala Gly Leu Ala Ser Phe

				110					115					120
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His	Ala	Ala	Gly	Glu 140	Cys	Ala	Arg	Asn	Ala 145	Thr	Суѕ	Thr	His	Tyr 150
Thr	Gln	Leu	Val	Trp 155	Ala	Thr	Ser	Ser	Gln 160	Leu	Gly	Cys	Gly	Arg 165
His	Leu	Cys	Ser	Ala 170	Gly	Gln	Thr	Ala	Ile 175	Glu	Ala	Phe	Val	Cys 180
Ala	Tyr	Ser	Pro	Gly 185	Gly	Asn	Trp	Glu	Val 190	Asn	Gly	Lys	Thr	Ile 195
Ile	Pro	Tyr	Lys	Lys 200	Gly	Ala	Trp	Cys	Ser 205	Leu	Cys	Thr	Ala	Ser 210
Val	Ser	Gly	Cys	Phe 215	Lys	Ala	Trp	Asp	His 220	Ala	Gly	Gly	Leu	Cys 225
Glu	Val	Pro	Arg	Asn 230	Pro	Cys	Arg	Met	Ser 235	Cys	Gln	Asn	His	Gly 240
Arg	Leu	Asn	Ile	Ser 245	Thr	Cys	His	Cys	His 250	Cys	Pro	Pro	Gly	Tyr 255
Thr	Gly	Arg	Tyr	Cys 260	Gln	Val	Arg	Cys	Ser 265	Leu	Gln	Cys	Val	His 270
Gly	Arg	Phe	Arg	Glu 275	Glu	Glu	Cys	Ser	Cys 280	Val	Cys	Asp	Ile	Gly 285
Tyr	Gly	Gly	Ala	Gln 290	Cys	Ala	Thr	Lys	Val 295	His	Phe	Pro	Phe	His 300
Thr	Cys	Asp	Leu	Arg 305	Ile	Asp	Gly	Asp	Cys 310	Phe	Met	Val	Ser	Ser 315
Glu	Ala	Asp	Thr	Tyr 320	Tyr	Arg	Ala	Arg	Met 325	Lys	Cys	Gln	Arg	Lys 330
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Asp	Ser	Asp	Phe	Glu 365	Thr	Arg	Asn	Phe	Trp 370	Ile	Gly	Leu	Thr	Tyr 375
Lys	Thr	Ala	Lys	Asp 380	Ser	Phe	Arg	Trp	Ala 385	Thr	Gly	Glu	His	Gln 390
Ala	Phe	Thr	Ser	Phe 395	Ala	Phe	Gly	Gln	Pro 400	Asp	Asn	His	Gly	Leu 405

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Asp Gly Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu
35 40 45

Lys Thr Lys Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile
50 55 60

Ile Ser Arg Tyr Ala Phe Thr Thr Val Ser Cys Arg Met Leu Asn
65 70 75

Arg Ala Ser Glu Asp Gln Asp Ile Glu Phe Gln Met Gln Ile Pro 80 85 90

Ala Ala Ala Phe Ile Thr Asn Phe Thr Met Leu Ile Gly Asp Lys
95 100 105

Val Tyr Gln Gly Glu Ile Thr Glu Arg Glu Lys Lys Ser Gly Asp 110 115 120

Arg Val Lys Glu Lys Arg Asn Lys Thr Thr Glu Glu Asn Gly Glu Lys Gly Thr Glu Ile Phe Arg Ala Ser Ala Val Ile Pro Ser Lys 140 145 Asp Lys Ala Ala Phe Phe Leu Ser Tyr Glu Glu Leu Leu Gln Arg 155 Arg Leu Gly Lys Tyr Glu His Ser Ile Ser Val Arg Pro Gln Gln Leu Ser Gly Arg Leu Ser Val Asp Val Asn Ile Leu Glu Ser Ala Gly Ile Ala Ser Leu Glu Val Leu Pro Leu His Asn Ser Arg Gln Arg Gly Ser Gly Arg Gly Glu Asp Asp Ser Gly Pro Pro Pro Ser Thr Val Ile Asn Gln Asn Glu Thr Phe Ala Asn Ile Ile Phe Lys 230 Pro Thr Val Val Gln Gln Ala Arg Ile Ala Gln Asn Gly Ile Leu Gly Asp Phe Ile Ile Arg Tyr Asp Val Asn Arg Glu Gln Ser Ile 260 Gly Asp Ile Gln Val Leu Asn Gly Tyr Phe Val His Tyr Phe Ala 275 Pro Lys Asp Leu Pro Pro Leu Pro Lys Asn Val Val Phe Val Leu 290 295 Asp Ser Ser Ala Ser Met Val Gly Thr Lys Leu Arg Gln Thr Lys 305 Asp Ala Leu Phe Thr Ile Leu His Asp Leu Arg Pro Gln Asp Arg 320 Phe Ser Ile Ile Gly Phe Ser Asn Arg Ile Lys Val Trp Lys Asp 335 His Leu Ile Ser Val Thr Pro Asp Ser Ile Arg Asp Gly Lys Val 350 Tyr Ile His His Met Ser Pro Thr Gly Gly Thr Asp Ile Asn Gly Ala Leu Gln Arg Ala Ile Arg Leu Leu Asn Lys Tyr Val Ala His 380 Ser Gly Ile Gly Asp Arg Ser Val Ser Leu Ile Val Phe Leu Thr Asp Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile Leu

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Ile Gly	Ile	Gly	Asn 440	Asp	Val	Asp	Phe	Arg 445	Leu	Leu	Glu	Lys	Leu 450
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Asp Ala	Gly	Ser	Gln 470	Leu	Ile	Gly	Phe	Tyr 475	Asp	Glu	Ile	Arg	Thr 480
Pro Leu	Leu	Ser	Asp 485	Ile	Arg	Ile	Asp	Tyr 490	Pro	Pro	Ser	Ser	Val 495
Val Gln	Ala	Thr	Lys 500	Thr	Leu	Phe	Pro	Asn 505	Tyr	Phe	Asn	Gly	Ser 510
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Leu His	Val	Glu	Val 530	Thr	Ala	Ser	Asn	Ser 535	Lys	Lys	Phe	Ile	Ile 540
Leu Lys	Thr	Asp	Val 545	Pro	Val	Arg	Pro	Gln 550	Lys	Ala	Gly	Lys	Asp 555
Val Thr	Gly	Ser	Pro 560	Arg	Pro	Gly	Gly	Asp 565	Gly	Glu	Gly	Asp	Thr 570
Asn His	Ile	Glu	Arg 575	Leu	Trp	Ser	Tyr	Leu 580	Thr	Thr	Lys	Glu	Leu 585
Leu Ser	Ser	Trp	Leu 590	Gln	Ser	Asp	Asp	Glu 595	Pro	Glu	Lys	Glu	Arg 600
Leu Arg	Gln	Arg	Ala 605	Gln	Ala	Leu	Ala	Val 610	Ser	Tyr	Arg	Phe	Leu 615
Thr Pro	Phe	Thr	Ser 620	Met	Lys	Leu	Arg	Gly 625	Pro	Val	Pro	Arg	Met 630
Asp Gly	Leu	Glu	Glu 635	Ala	His	Gly	Met	Ser 640	Ala	Ala	Met	Gly	Pro 645
Glu Pro	Val	Val	Gln 650	Ser	Val	Arg	Gly	Ala 655	Gly	Thr	Gln	Pro	Gly 660
Pro Leu	Leu	Lys	Lys 665	Pro	Asn	Ser	Val	Lys 670	Lys	Lys	Gln	Asn	Lys 675
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Pro l	Pro	Thr	Thr	Ile 335	Pro	Pro	Pro	Thr	Thr 340	Thr	Thr	Thr	Thr	Thr 345	
Thr 5	Thr	Thr	Thr	Thr 350	Thr	Ile	Leu	Thr	Ile 355	Ile	Thr	Asp	Ser	Arg 360	
Ala(Gly	Glu	Glu	Gly 365	Ser	Ile	Arg	Ala	Val 370	Asp	His	Ala	Val	Ile 375	
Gly (Gly	Val	Val	Ala 380	Val	Val	Val	Phe	Ala 385	Met	Leu	Cys	Leu	Leu 390	
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Val Pro Arg Asp Val Pro Pro Asp Thr Val Gly Leu Tyr Val Phe 50 55 60

Glu Asn Gly Ile Thr Met Leu Asp Ala Ser Ser Phe Ala Gly Leu
65 70 75

Pro Gly Leu Gln Leu Leu Asp Leu Ser Gln Asn Gln Ile Ala Ser

Leu Arg Leu Pro Arg Leu Leu Leu Leu Asp Leu Ser His Asn Ser 95 100 . 105

Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu

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Leu	Phe	Ser	Arg	Leu 140	Arg	Asn	Leu	His	Asp 145	Leu	Asp	Val	Ser	Asp 150
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Leu	Phe	Pro	Arg	Leu 215	Arg	Leu	Leu	Ala	Ala 220	Ala	Arg	Asn	Pro	Phe 225
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Ser	His	Val	Thr	Leu 245	Ala	Ser	Pro	Glu	Glu 250	Thr	Arg	Cys	His	Phe 255
Pro	Pro	Lys	Asn	Ala 260	Gly	Arg	Leu	Leu	Leu 265	Glu	Leu	Asp	Tyr	Ala 270
Asp	Phe	Gly	Cys	Pro 275	Ala	Thr	Thr	Thr	Thr 280	Ala	Thr	Val	Pro	Thr 285
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Ser	Pro	Pro	Ser	Thr 320	Ala	Pro	Pro		Val 325	_	Pro	Val	Pro	Gln 330
Pro	Gln	Asp	Cys	Pro 335	Pro	Ser	Thr	Cys	Leu 340	Asn	Gly	Gly	Thr	Cys 345
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Phe	Thr	Gly	Leu	Tyr 365	Cys	Glu	Ser	Gln	Met 370	Gly	Gln	Gly	Thr	Arg 375
Pro	Ser	Pro	Thr	Pro 380	Val	Thr	Pro	Arg	Pro 385	Pro	Arg	Ser	Leu	Thr 390
Leu	Gly	Ile	Glu	Pro 395	Val	Ser	Pro	Thr	Ser 400	Leu	Arg	Val	Gly	Leu 405

Gln Arg Tyr Leu Gln Gly Ser Ser Val Gln Leu Arg Ser Leu Arg Leu Thr Tyr Arg Asn Leu Ser Gly Pro Asp Lys Arg Leu Val Thr 425 430 Leu Arg Leu Pro Ala Ser Leu Ala Glu Tyr Thr Val Thr Gln Leu 440 Arg Pro Asn Ala Thr Tyr Ser Val Cys Val Met Pro Leu Gly Pro 455 Gly Arg Val Pro Glu Gly Glu Glu Ala Cys Gly Glu Ala His Thr Pro Pro Ala Val His Ser Asn His Ala Pro Val Thr Gln Ala Arg Glu Gly Asn Leu Pro Leu Leu Ile Ala Pro Ala Leu Ala Ala Val Leu Leu Ala Ala Leu Ala Ala Val Gly Ala Ala Tyr Cys Val Arg 515 520 Arg Gly Arg Ala Met Ala Ala Ala Gln Asp Lys Gly Gln Val 530 Gly Pro Gly Ala Gly Pro Leu Glu Leu Glu Gly Val Lys Val Pro 545 Leu Glu Pro Gly Pro Lys Ala Thr Glu Gly Gly Glu Ala Leu Pro Ser Gly Ser Glu Cys Glu Val Pro Leu Met Gly Phe Pro Gly 575 580 585 Pro Gly Leu Gln Ser Pro Leu His Ala Lys Pro Tyr Ile

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590

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<212> PRT

<213> Homo Sapien

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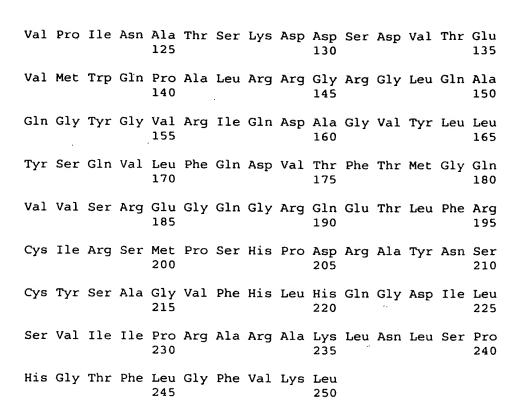
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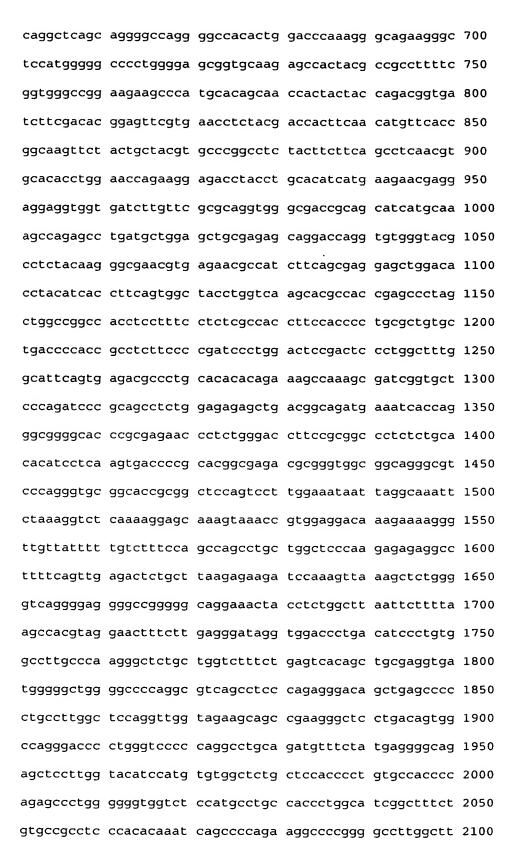
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Pro Pro Asp His Ala Glu Arg Ala Glu Glu Glu His Glu Lys Tyr
50 55 60

Arg Pro Ser Gln Asp Gln Gly Leu Pro Ala Ser Arg Cys Leu Arg
65 70 75

Cys Cys Asp Pro Gly Thr Ser Met Tyr Pro Ala Thr Ala Val Pro 80 85 90

Gln Ile Asn Ile Thr Ile Leu Lys Gly Glu Lys Gly Asp Arg Gly

Asp Arg Gly Leu Gln Gly Lys Tyr Gly Lys Thr Gly Ser Ala Gly

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Ala	Pro	Gly	Glu	Arg 140	Cys	Lys	Ser	His	Tyr 145	Ala	Ala	Phe	Ser	Val 150	
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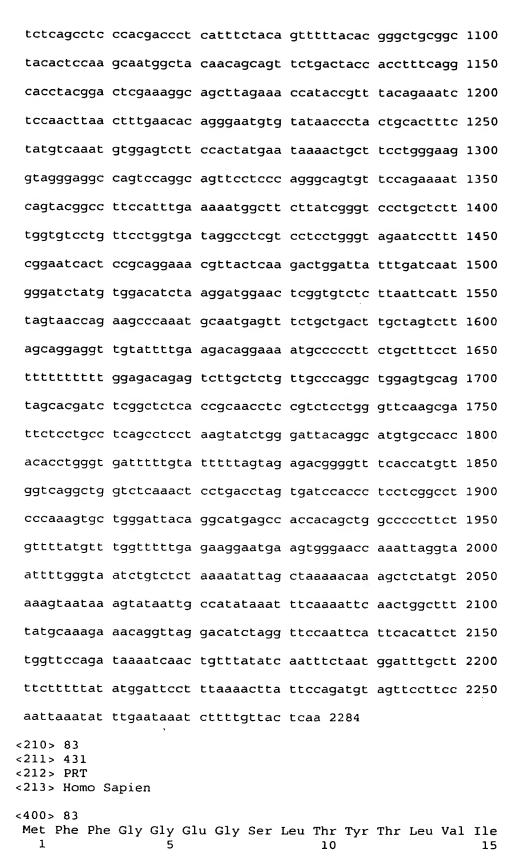
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Gln Lys Cys Asp His Trp Thr Pro Cys Pro Ser Asp Thr Tyr Ala 65 70 75

Tyr Arg Leu Leu Ser Gly Gly Gly Arg Ser Lys Tyr Ala Lys Ile 80 85 90

Cys Phe Glu Asp Asn Leu Leu Met Gly Glu Gln Leu Gly Asn Val 95 100 105

Ala Arg Gly Ile Asn Ile Ala Ile Val Asn Tyr Val Thr Gly Asn
110 115 120

Val Thr Ala Thr Arg Cys Phe Asp Met Tyr Glu Gly Asp Asn Ser 125 130 135

Gly Pro Met Thr Lys Phe Ile Gln Ser Ala Ala Pro Lys Ser Leu 140 145 150

Leu Phe Met Val Thr Tyr Asp Asp Gly Ser Thr Arg Leu Asn Asn 155 160 165

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